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Ξ^- production in Au Au collisions at $11.3\text{GeV}/A$ at the AGS

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This thesis will focus on the study of the Ξ^- yield, transverse mass distribution and rapidity distribution, as obtained from gold on gold interactions with an energy of $11.3\text{GeV}/A$ in the experiment E896 at the AGS. The comparison of these data with data from SPS could give insight about the effect of nuclear transparency at high energies, on the production of strange particles, and hypothetically on the production of QGP. Indeed a strangeness enhancement appears to be a good QGP signature: an enhancement in heavy ions collisions with respect to $p + p$ collisions is more problematic to explain with non QGP scenarios than other effects are. A total Ξ^- yield comparable to what has been measured at SPS is predicted after 500 hours of data taking.

Once the Ξ^- are reconstructed, the invariant mass of Ξ^-p couples pointing back to the main vertex will be measured to observe whether the H_0 dibaryon is produced with a mass higher than the $H_0 \rightarrow \Xi^-p$ threshold.

The Ξ^- will be reconstructed using an array of silicon drift detectors placed close to the target in a magnetic field of $7T$.